

CLAIMS

What is claimed is:

1. A slim optical disc drive comprising:
a tray having a spindle motor which rotates an optical disc and an optical pickup which slides across the optical disc mounted on the tray;
a lower case where the tray is slidably installed; and
a main control board installed on the lower case to control operation of the optical disc drive,
wherein the lower case comprises:
a first frame which supports a first side of the tray,
a second frame which supports a second side of the tray, and
a third frame formed of a plate member which is narrower than the first frame and the second frame, to connect the first frame and the second frame and disposed under the tray and the main control board.
2. The slim optical disc drive of claim 1, wherein the main control board is coupled to each of the first frame and the second frame.
3. The slim optical disc drive of claim 1, further comprising a flexible printed circuit which is flexibly bent as the tray slides and electrically connects the tray and the main control board, wherein a portion of the flexible printed circuit is fixed to the third frame.
4. The slim optical disc drive of claim 1, further comprising a beading line protruding upward and formed on the third frame to improve a bending strength.
5. The slim optical disc drive of claim 1, wherein a plurality of reference holes are formed in the first frame and the second frame and a plurality of protruding portions coupled to the reference holes are formed on the third frame.

6. The slim optical disc drive of claim 3, wherein the flexible printed circuit comprises a first connection portion which connects the flexible printed circuit to the tray of the optical disc drive and a second connection portion which connects the flexible printed circuit to the main control board.

7. The slim optical disc drive of claim 3, wherein the flexible printed circuit is U-shaped and has a first connection portion and a second connection portion formed on end portions of the flexible printed circuit.

8. The slim optical disc drive of claim 6, wherein the first connection portion and the second connection portion are formed on end portions of the flexible printed circuit.

9. The slim optical disc drive of claim 1, further comprising a step formed on the tray, which corresponds to the height of the main control board to keep the tray from interfering with the main control board.

10. The slim optical disc drive of claim 1, wherein a plurality of reference holes are formed on the third frame and a plurality of protruding portions coupled to the reference holes are formed on the first and the second frames.

11. A slim optical disc drive comprising:
a tray having a spindle motor which rotates an optical disc and an optical pickup which slides across the optical disc mounted on the tray;
a lower case where the tray is slidably installed;
a main control board installed on the lower case to control operation of the optical disc drive,
wherein the lower case comprises:
a first frame which supports a first side of the tray,
a second frame which supports a second side of the tray, and
a third frame formed of a plate member which is narrower than the first frame and the second frame, to connect the first frame and the second frame and disposed under the tray and the main control board; and

a step formed on the tray, which corresponds to the height of the main control board to keep the tray from interfering with the main control board and an interval between a bottom surface of the tray and an upper surface of the third frame which is greater than a thickness of the third frame and an interval between a bottom surface of the main control board and the upper surface of the third frame which is greater than thickness of the third frame.